


**TABLE 1: REFERENCE CHART FOR APPROVED
SHELL MECHANICAL EXPANSION ANCHORS**

Date First Approved: November 20, 1997

		Type	INTERNAL PLUG 			EXTERNAL PLUG		
		Stud Diameter	1/4 inch	1/2 inch	3/4 inch	1/4 inch	1/2 inch	3/4 inch
		Installation Torque	4 ft-lbs	22 ft-lbs	80 ft-lbs	4 ft-lbs	22 ft-lbs	80 ft-lbs
MANUFACTURER	ITW RAMSET/ RED HEAD	NAME:	Multi-Set II Anchor			Non-Drilling Anchor		
		MODEL:	RM-14; 1/4" ϕ x 1"	RM-12; 1/2" ϕ x 2"	RM-34; 3/4" ϕ x 3"	J-14; 1/4" ϕ x 1-1/8"	J-12; 1/2" ϕ x 2-1/16"	J-34
		HOLE DEPTH:	1-1/2"	2-1/2"	3-1/2"	1-5/8"	2-9/16"	NOT APPROVED
		DRILL BIT DIA.:	3/8"	5/8"	1"	7/16"	11/16"	
		DRILL BIT TIP TOLERANCE:	0.390"/0.398" (min/max)	0.650"/0.660" (min/max)	1.030"/1.042" (min/max)	0.458"/0.468" (min/max)	0.713"/0.723" (min/max)	
		INSTALLATION TOOL:	RT-14	RT-12	RT-34	JD-14	JD-12	
	POWERS FASTENERS (RAWLPLUG)	NAME:	Steel Drop-In			Steel Drop-In Ext. Plug		
		MODEL:	6304	6308; 1/2" ϕ x 2-3/8"	6312; 3/4" ϕ x 3-1/2"	6460	6465; 1/2" ϕ x 2"	6468; 3/4" ϕ x 3"
		HOLE DEPTH:	NOT APPROVED	2-7/8"	4"	NOT APPROVED	2-1/2"	3-1/2"
		DRILL BIT DIA.:		5/8"	1"		11/16"	1"
		DRILL BIT TIP TOLERANCE:		0.650"/0.660" (min/max)	1.030"/1.042" (min/max)		0.713"/0.723" (min/max)	1.030"/1.042" (min/max)
		INSTALLATION TOOL:		6309	6313		6808	6812

Notes:

1. Approved shell anchors shown in the above table have been creep tested per California Test No. 681 (Caltrans Standard Specifications, Section 75).
2. The Table lists basic installation details for approved anchors.
3. The hole depths shown are the minimum required by Caltrans and include a 1/2-inch recess (see Bridge Design Aids, Section 5).
4. Shell anchor units shown above are electroplated with zinc, and these are not suitable in a corrosive environment. These anchors are generally not tapped oversize to accept a hot-dip galvanized stud or cap screw, and are not furnished with stud, nut, or washer.

Revision Date: March 14, 2003